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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* RONALD SCOTT BECKLEY,  
THOMAS FREDERICK KAUFFMAN,  
MICHAEL JOHN ZAJACZKOWSKI, MAI CHEN,  
and JOSEPH JAMES ZUPANCIC

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Appeal 2010-004252  
Application 10/660,186  
Technology Center 1700

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Before TERRY J. OWENS, PETER F. KRATZ, and  
CATHERINE Q. TIMM, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-6, 11-13, 15, 16 and 18-26, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

*The Invention*

The Appellants claim a curable mixture which, the Appellants state (Spec. 1:4-6), is useful as an adhesive. Claim 1 is illustrative:

1. A curable mixture comprising at least one multi-functional Michael donor, at least one multi-functional Michael acceptor, and at least one anion of a Michael donor, wherein said curable mixture comprises 5% or less by weight non-reactive volatile compounds that have boiling points of 120°C or less, based on the total weight of said curable mixture, wherein each Michael acceptor functional group in said multifunctional Michael acceptor is a residue of acrylic acid, methacrylic acid, fumaric acid, or maleic acid.

*The References*

Irie	5,959,028	Sep. 28, 1999
Leake	6,521,716 B1	Feb. 18, 2003
Straw	2003/0165701 A1	Sep. 4, 2003

*The Rejections*

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1-6, 11-13, 15, 16, 18-20 and 22-24 over Irie in view of Straw, and claims 21, 25 and 26 over Irie in view of Straw and Leake.

OPINION

We reverse the rejections.

*Issue*

Have the Appellants indicated reversible error in the Examiner's determination that Irie and Straw would have rendered prima facie obvious, to one of ordinary skill in the art, a curable mixture comprising 5 wt% or less of nonreactive volatile compounds having boiling points of 120 ° C or less, based on the total weight of the curable mixture?<sup>1</sup>

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<sup>1</sup> The Examiner does not rely upon Leake for any disclosure which remedies the deficiency in Irie and Straw as to this issue (Ans. 7-10).

*Findings of Fact*

Irie discloses “a resinous composition which cures through a Michael reaction” (col. 1, ll. 6-7). The curable resin’s components “are dissolved or dispersed in an organic solvent conventionally used in the coating industry” (col. 6, ll. 19-21). The exemplified compositions contain about 50 wt% volatiles (col. 6, l. 57; col. 7, ll. 13, 37, 65).

Straw discloses: “Coating compositions curable by Michael reaction have several advantages. Liquid polymers and oligomers can be cross-linked to form tough hard coatings, so that the coating composition need have little or no volatile organic solvent to achieve a viscosity suitable for spray application” (§ 0003). Straw’s Michael curing coating composition is waterborne and contains no more than a small amount of solvent (§§ 0011, 0014).

*Analysis*

The Examiner argues that “Straw discloses that the volatiles should be removed, for instance under vacuum (page 4, [0039])” (Ans. 6).

As pointed out by the Appellants (Br. 13) and the declarant Mai Chen (Declaration of Mai Chen under 37 CFR § 1.132 filed Apr. 7, 2009, § 0005), the portion of Straw relied upon by the Examiner discloses removal of volatiles only from a specific Michael acceptor, not from the other components or the curable composition.

The Examiner argues that volatiles are removed from Irie’s coating composition when it is cured (Ans. 11).

That argument is not well taken because the Appellants’ claims require that the composition containing low volatiles is a curable composition, not one which has been cured.

The Examiner argues that the composition in Irie's Example 31 contains 5 wt% or less nonreactive volatiles (Ans. 12).

As indicated by the Appellants (Br. 9-10), the Examiner has not shown that any composition in that example contains Irie's Michael reaction components (a), (b) and (c). Moreover, the Examiner has not established that the cathodic electrodeposition paint or the midlayer paint in that example, before curing, contains no more than 5 wt% nonreactive volatiles, or that the example's base coat composition wherein the acrylic varnish contains 20 wt% volatiles, the two melamine resin components contain, respectively, 20 and 10 wt% volatiles, and the composition contains 8 wt% isopropyl alcohol has, before curing, no more than 5 wt% nonreactive volatiles.

The Examiner argues that "it would have been obvious to one having ordinary skill in the art at the time the invention was made [to] employ little or no volatile compounds as taught by Straw in Irie's resin composition curable through a Michael reaction in order to achieve a viscosity suitable for spray application (US'701[Straw], page 1, [0003], page 4, [0039])" (Ans. 13-14). The Examiner clarifies that he is relying upon only those two portions of Straw and not upon Straw's waterborne composition (Ans. 13).

The Chen Declaration states that "[j]ust because Irie's ingredients are suitable for use in his low-solids composition does not make it obvious to a person of ordinary skill in the art that his ingredients would therefore be suitable for use in a high-solids composition" (§ 0013) and that "it is common that a polymer suitable for a low-solids composition must be altered or replaced in order to make an effective high-solids composition. It would require extensive experimentation to characterize Irie's ingredients to

find out whether Irie's ingredients would be suitable for use in a high-solids composition" (§ 0015).

Although Straw indicates that Michael reaction coating compositions containing little or no volatile organic solvent were known (§ 0003), the Examiner has not provided evidence or reasoning which shows that one of ordinary skill in the art would have considered Irie's composition to be among those which are suitable if they contain little or no volatile solvent. As stated in *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). The Examiner has not provided the required articulated reasoning with rational underpinning.

#### *Conclusion of Law*

The Appellants have indicated reversible error in the Examiner's determination that Irie and Straw would have rendered prima facie obvious, to one of ordinary skill in the art, a curable mixture comprising 5 wt% or less of nonreactive volatile compounds having boiling points of 120 ° C or less, based on the total weight of the curable mixture.

#### DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 1-6, 11-13, 15, 16, 18-20 and 22-24 over Irie in view of Straw, and claims 21, 25 and 26 over Irie in view of Straw and Leake are reversed.

It is ordered that the Examiner's decision is reversed.

REVERSED

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